

LOWER THE ON-RESISTANCE IN PROTECTION CIRCUIT OF RECHARGEABLE BATTERY BY USING FLIP-CHIP TECHNOLOGY

ABSTRACT OF THE INVENTION

A method of mounting flip-chip for lowering the on-resistance of power transistor in the protection circuit of rechargeable battery, which comprises a power field effect transistor and a protection IC, has the following steps: first, serially connect drain metal contacts of two transistors to form a chip cell during fabrication of wafer; then, use welding torch to point weld the metal wire on contact of each chip cell, so that the source and gate contacts will form welding metal bumps respectively; cut the wafer to form bare chip cells of two serially connected gate electrodes; stain said chip cell with tin so that said welding metal bumps on contacts are attached with tin balls; apply plastic material to positioned points of printed circuit board; use flip-chip technology to make drain of a bare chip cell face upward, so that said tin balls are aligned with the positioned points of printed circuit board; finally, passing through an oven for heating and pressuring, so that said tin balls will fuse and said plastic material will be hardened and soldered together with contacts on the printed circuit board. Thus, it is possible to omit steps of wire welding and packing for power transistor, not only lower the cost and reduce the volume of the protection circuit but also lower the on-resistance of power field effect transistor.